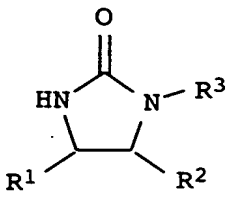
We claim:

1. A process for preparing chiral imidazolidin-2-ones of the general formula I



(I),

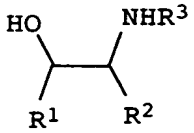
in which

R^1 is C_1-C_8-alkyl, cyclohexyl, phenyl, a C_1-C_6-alkyl-, halo-, nitro-, C_1-C_6-alkoxy-, C_1-C_6-alkylmercapto- or CF_3-substituted phenyl radical, naphthyl or a C_1-C_6-alkyl-, halo-, nitro-, C_1-C_6-alkoxy- or CF_3-substituted naphthyl radical,

R^2 is C_1-C_8-alkyl, C_2-C_8-alkenyl, cyclohexyl, phenyl or a phenyl-C_1-C_6-alkyl radical which may be substituted by a nitro, C_1-C_6-alkoxy, methylenedioxy or CF_3 radical, and

R^3 is C_1-C_{12}-alkyl, C_2-C_8-alkenyl, cyclohexyl, phenyl or a C_1-C_6-alkyl-, halo-, nitro-, C_1-C_6-alkoxy-, methylenedioxy-, dialkylamino- or CF_3-substituted phenyl radical,

by reacting a compound of the formula II or the salt thereof



(II)

in which R^1, R^2 and R^3 have the abovementioned meaning,

with urea in the presence of an ammonium salt, wherein the reaction is carried out in the presence of a polar organic solvent and the reaction takes place in solution at temperatures of from 170 to 190°C.

2. A process as claimed in claim 1, wherein an aprotic solvent is used.

3. A process as claimed in either of claims 1 or 2, wherein N-methylpyrrolidone is employed as organic solvent.

4. A process as claimed in any of claims 1 to 3, wherein R^1 is phenyl and R^2 and R^3 are methyl.

5. A process as claimed in any of claims 1 to 4, wherein the reaction is carried out in the presence of proton donors, wherein an acid with a pKa of ≤ 3 is used as proton donor.

6. A process as claimed in any of claims 1 to 5, wherein para-toluenesulfonic acid is employed as proton donor.

7. A process as claimed in any of claims 1 to 6, wherein sulfamic acid is employed as proton donor.

8. A process as claimed in any of claims 1 to 7, wherein the proton donor is employed in amounts of from 0.05 to 0.6 equivalent based on the compound of the formula II.

9. A process as claimed in any of claims 1 to 8, wherein (1S,2R)-ephedrine or a salt thereof is employed as compound of the formula II.

10. A process as claimed in any of claims 1 to 9, wherein (1R,2S)-ephedrine or a salt thereof is employed as compound of the formula II.